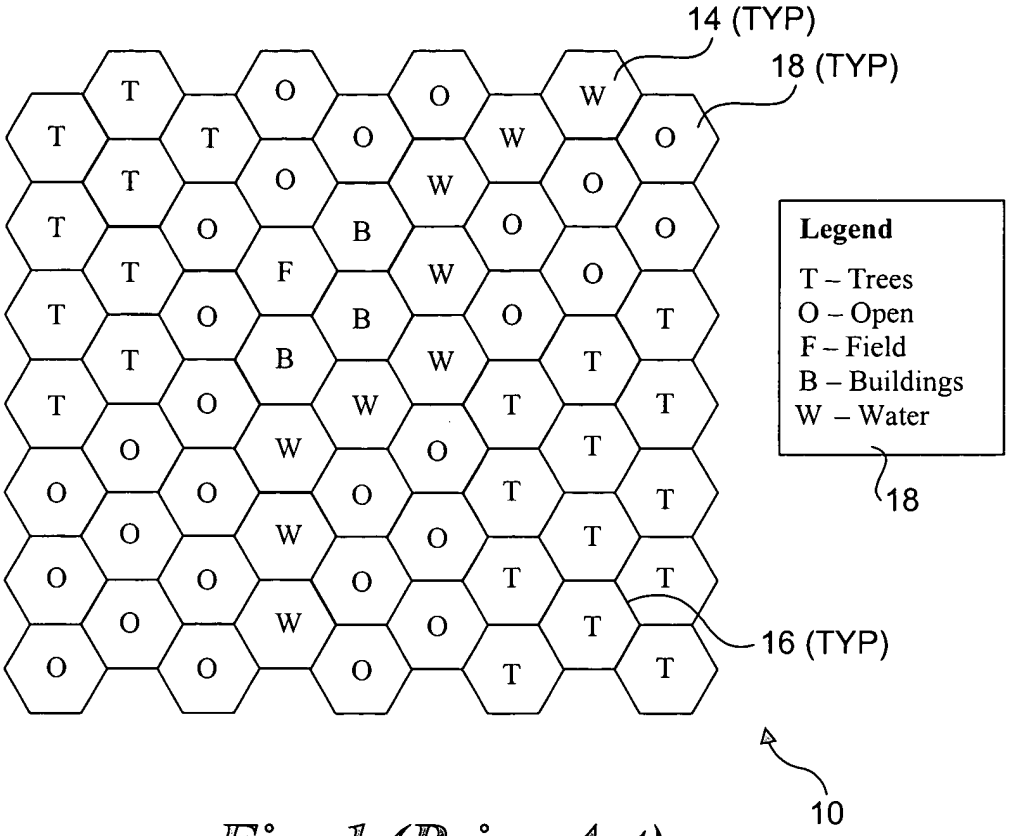


Fig. 1 (Prior Art)

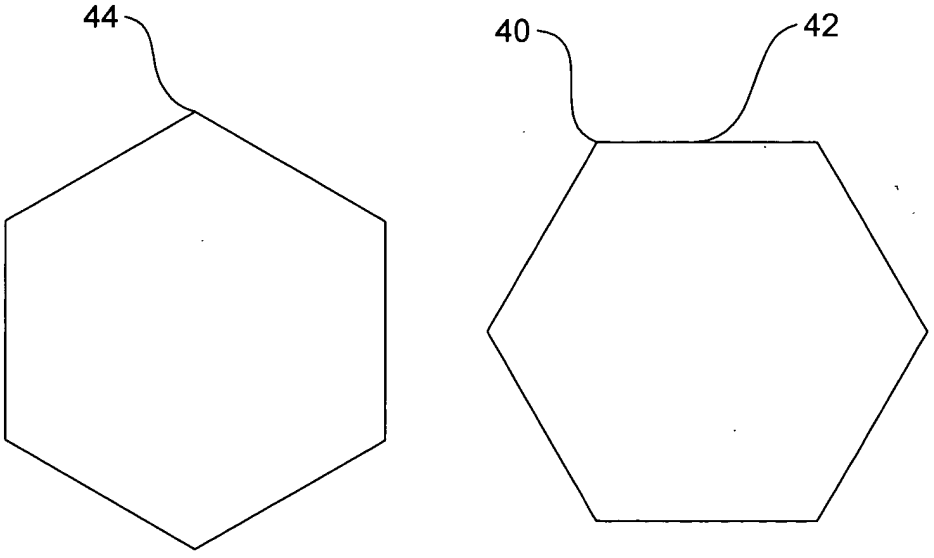


Fig. 2

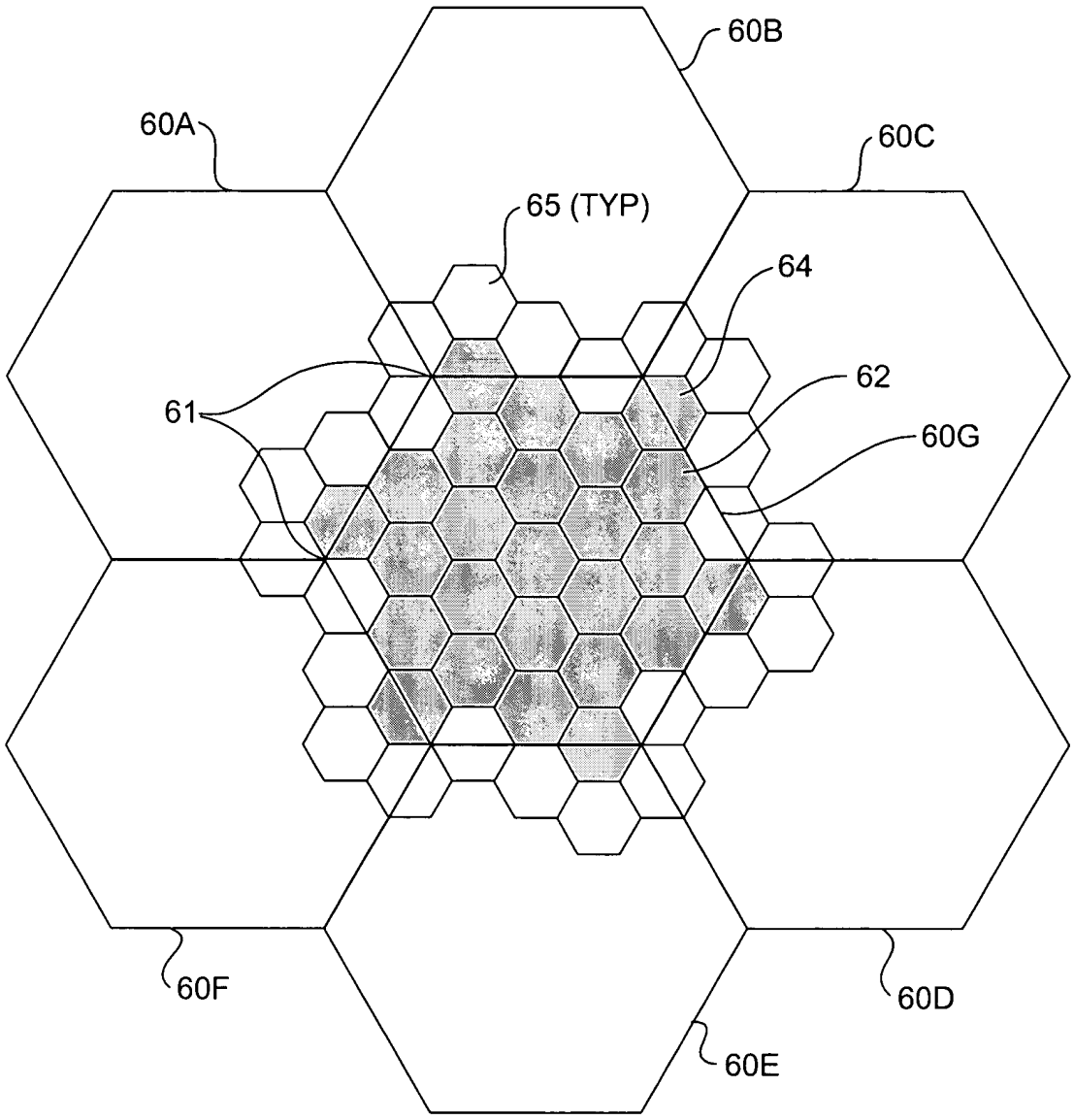


Fig. 3

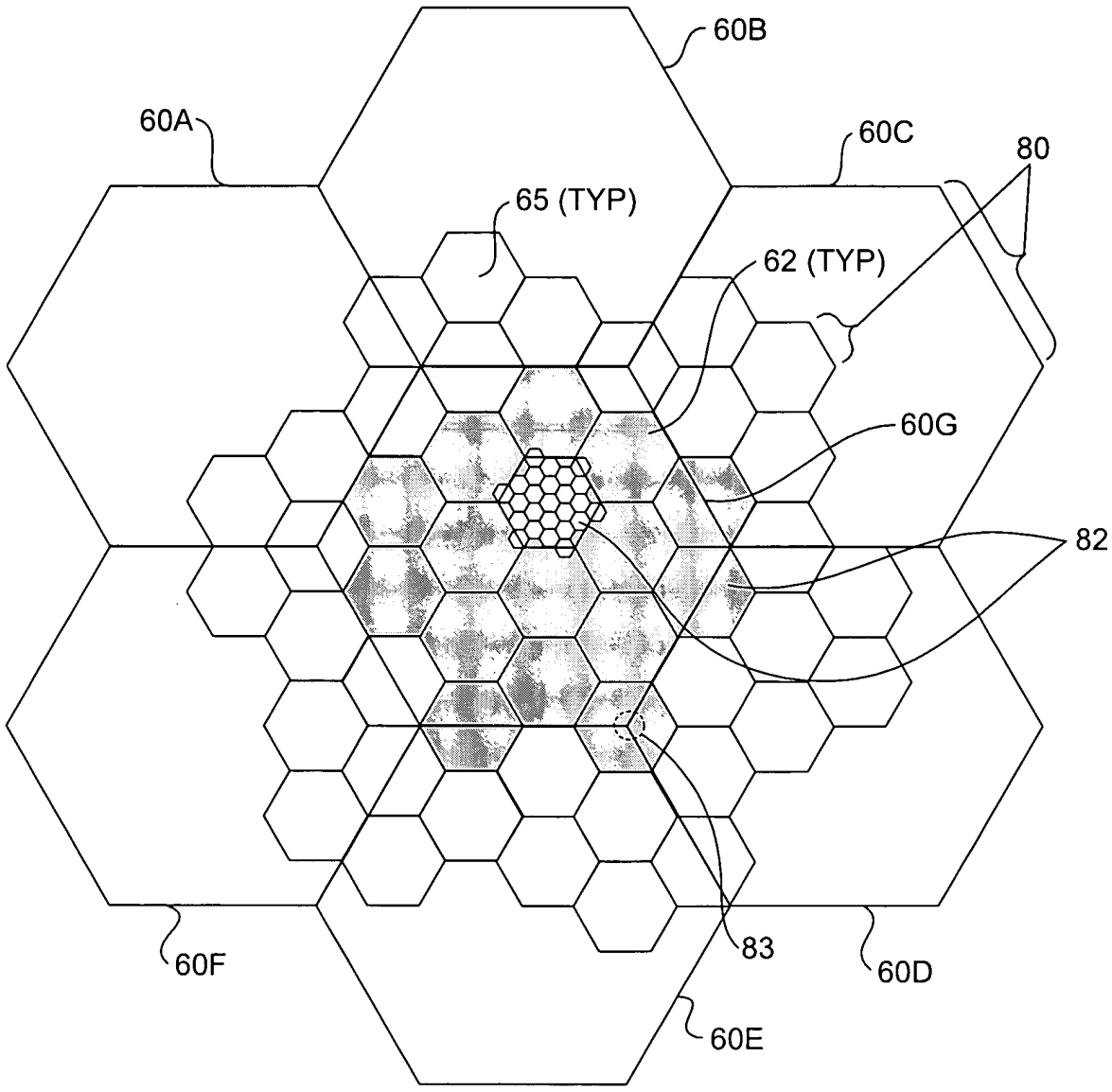


Fig. 4

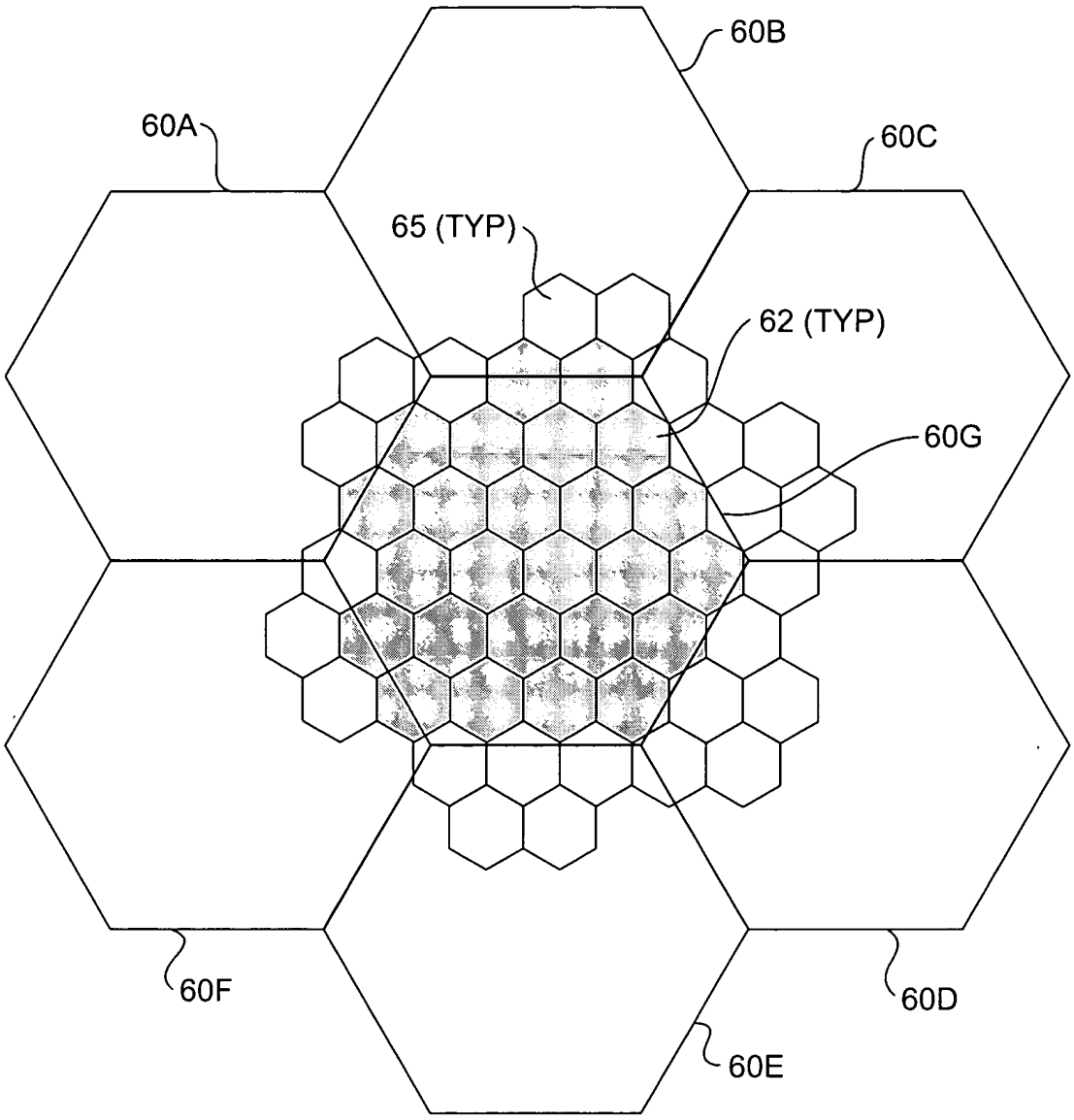


Fig. 5

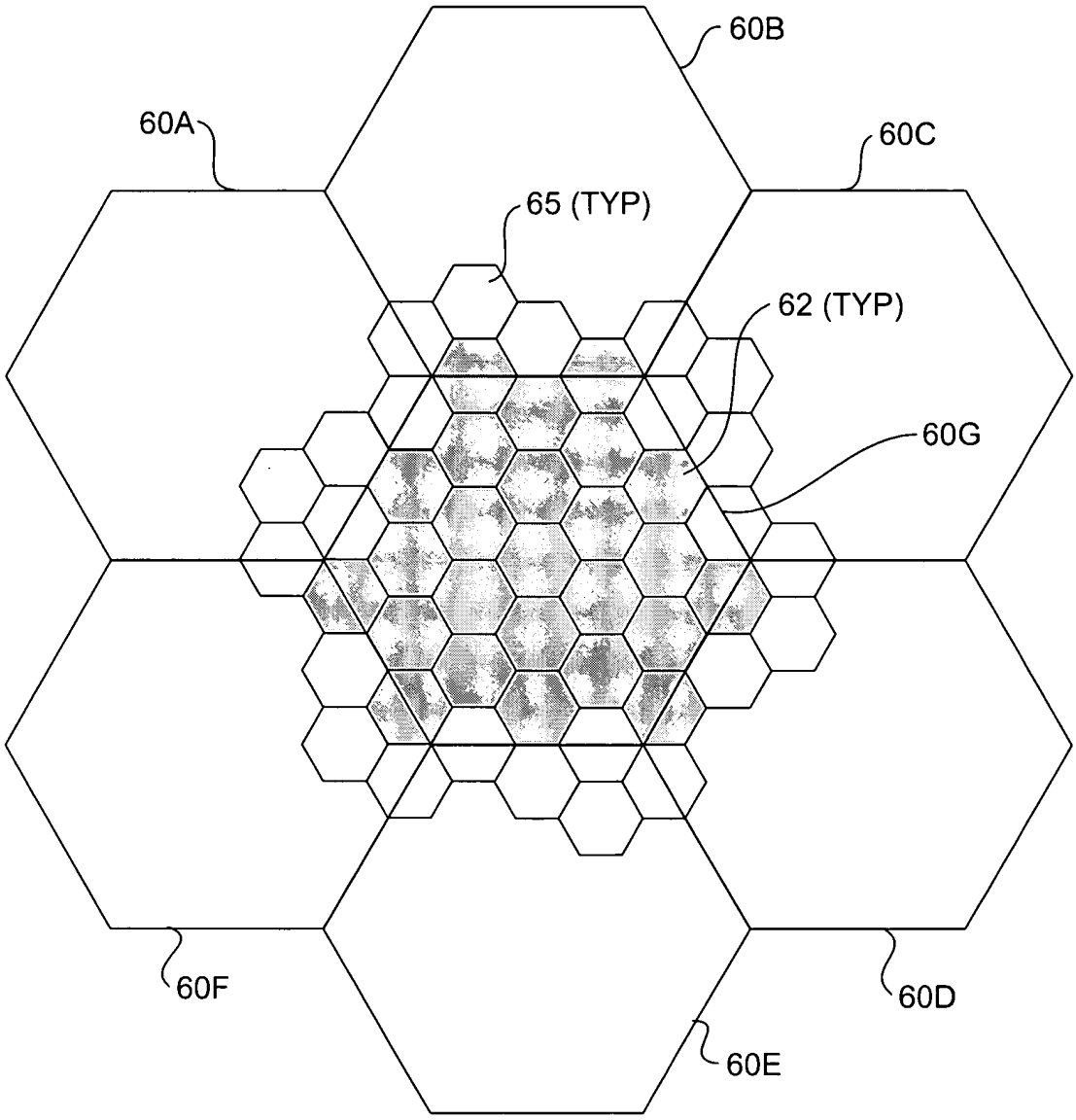


Fig. 6

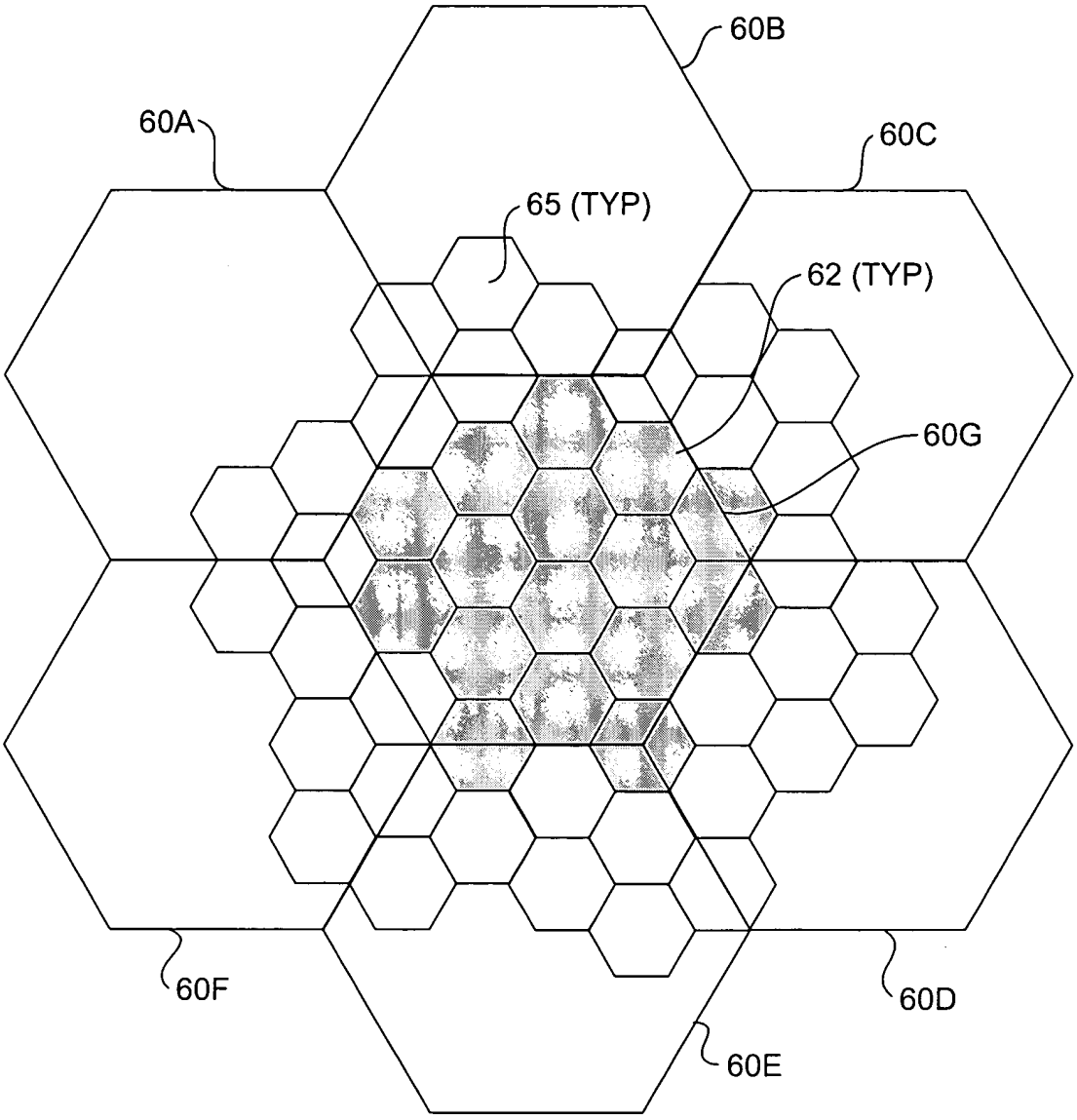


Fig. 7

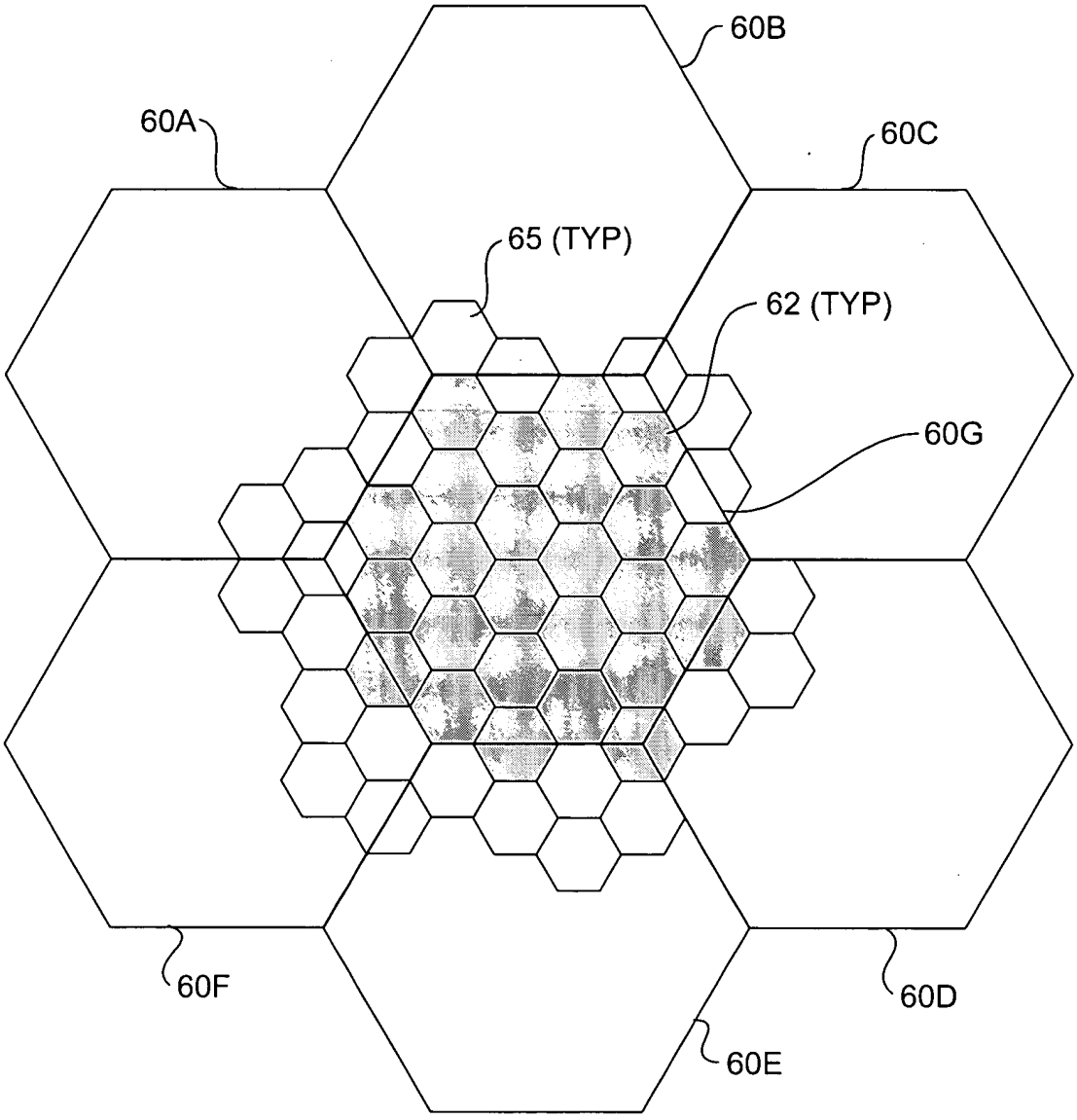


Fig. 8

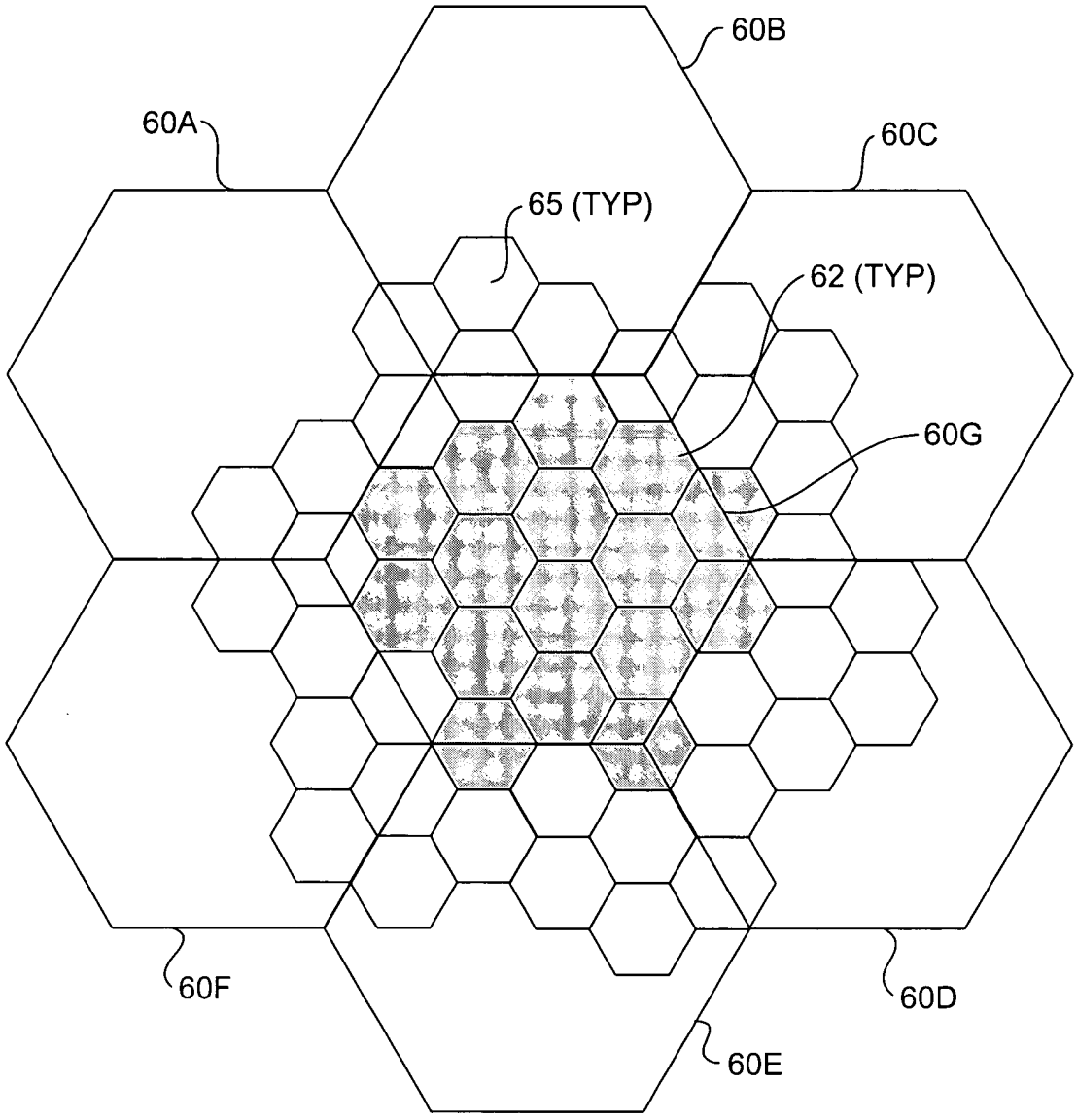
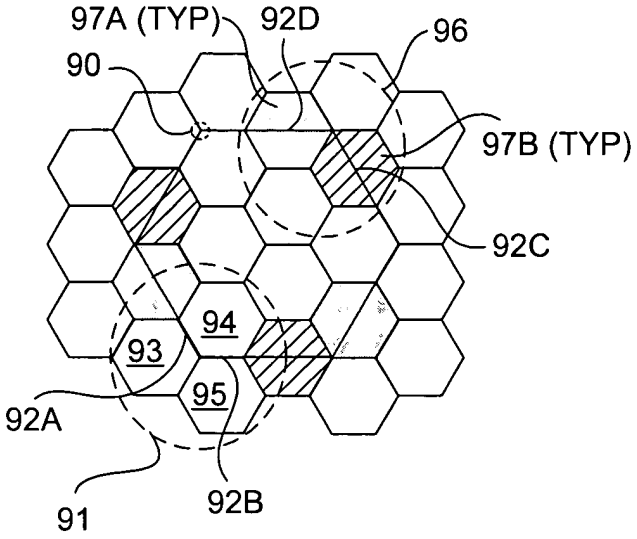


Fig. 9

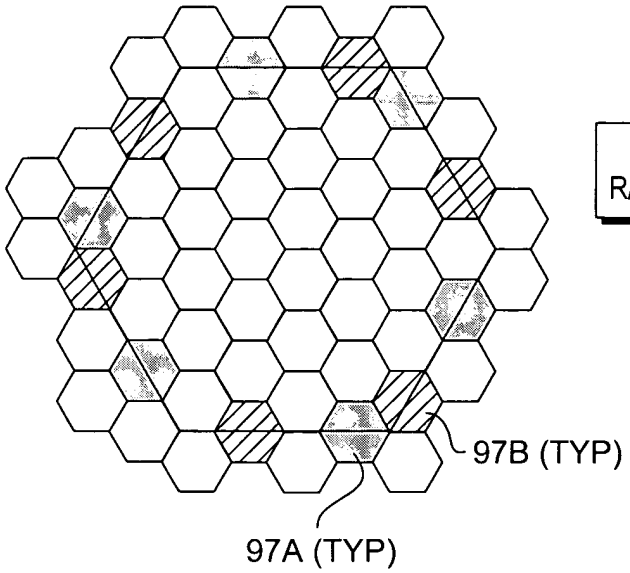
MICRO-HEX RATIO 3:1
R/3 = 1, REMAINDER Y = 0

Fig. 10a



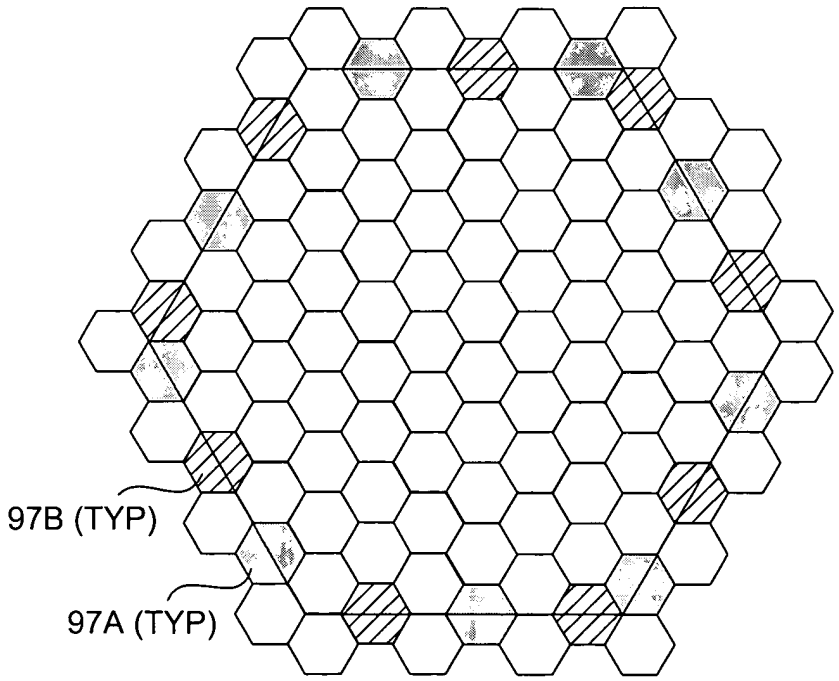
MICRO-HEX RATIO 6:1
R/3 = 2, REMAINDER Y = 0

Fig. 10b



MICRO-HEX RATIO 9:1
R/3 = 3, REMAINDER Y = 0

Fig. 10c



MICRO-HEX RATIO 4:1
R/3 = 1, REMAINDER Y = 1

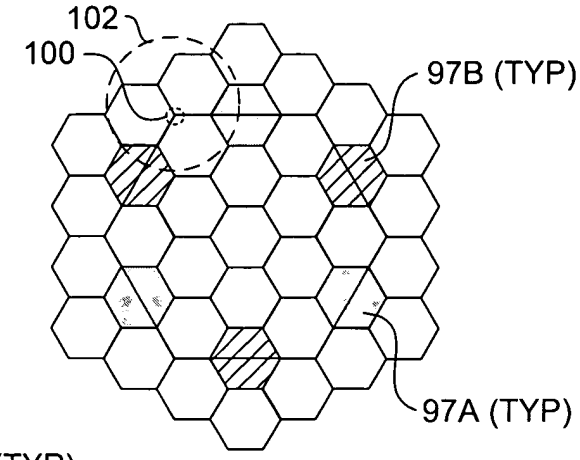
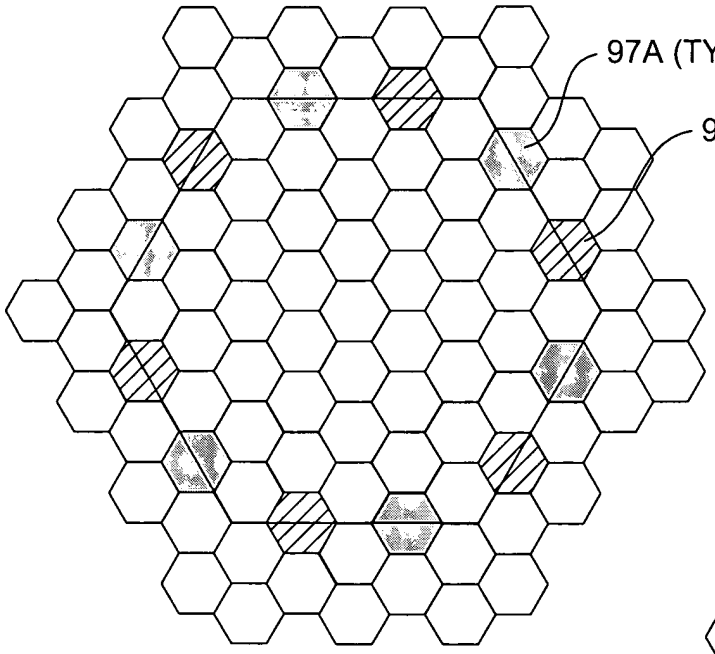
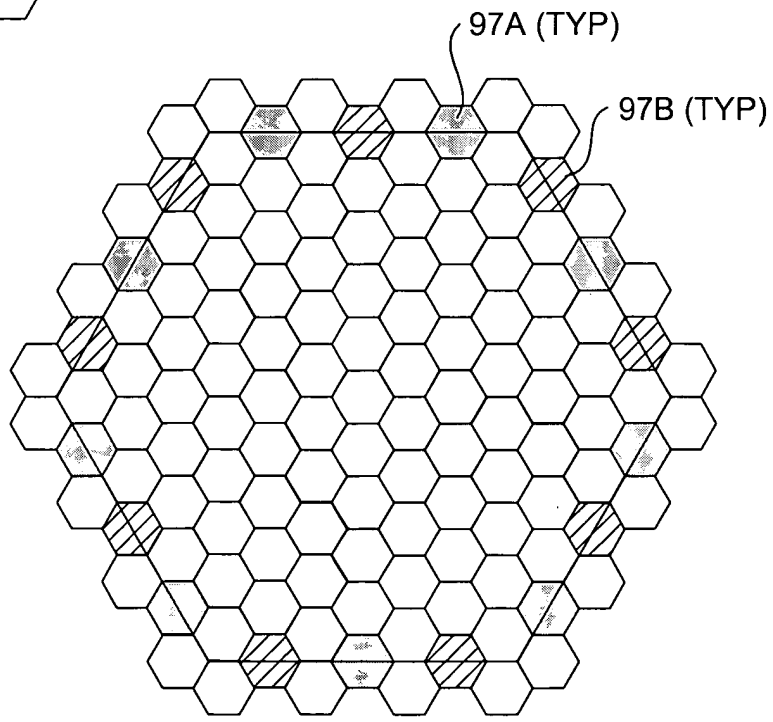


Fig. 11a



MICRO-HEX RATIO 7:1
R/3 = 2, REMAINDER Y = 1

Fig. 11b

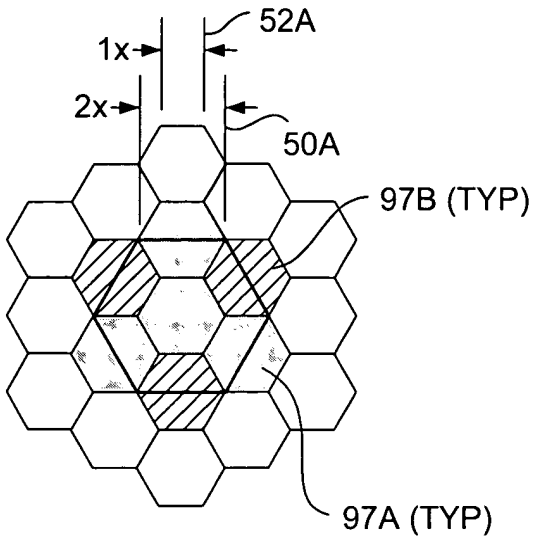


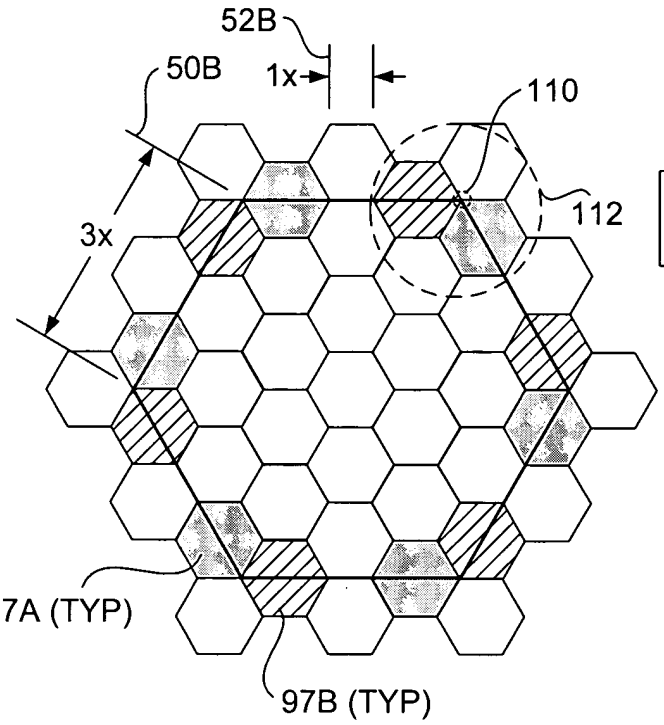
MICRO-HEX RATIO 10:1
R/3 = 3, REMAINDER Y = 1

Fig. 11c

MICRO-HEX RATIO 2:1
R/3 = 1, REMAINDER Y = 2

Fig. 12a



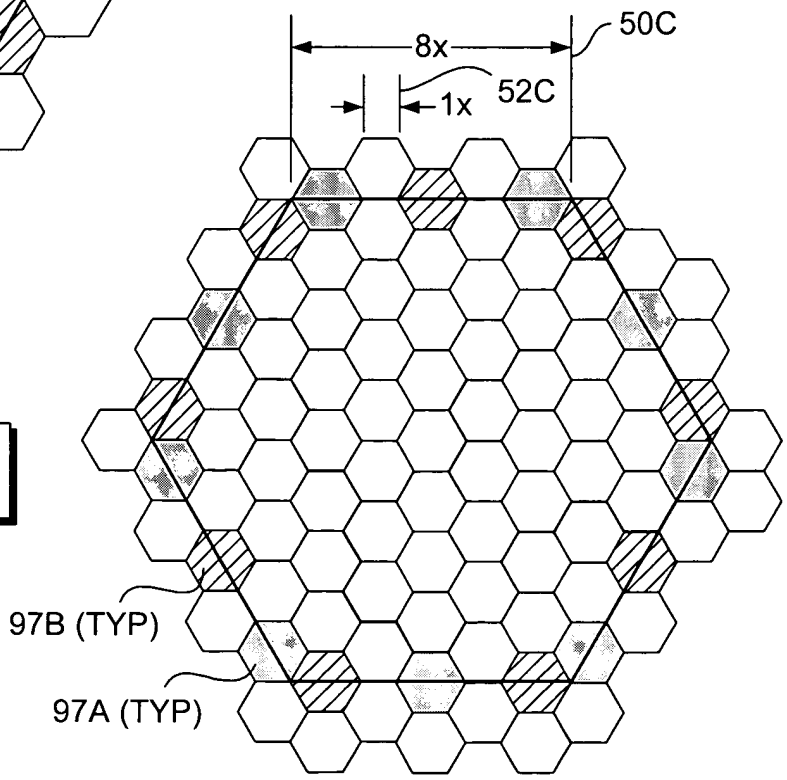


MICRO-HEX RATIO 5:1
R/3 = 2, REMAINDER Y = 2

Fig. 12b

MICRO-HEX RATIO 8:1
R/3 = 2, REMAINDER Y = 2

Fig. 12c



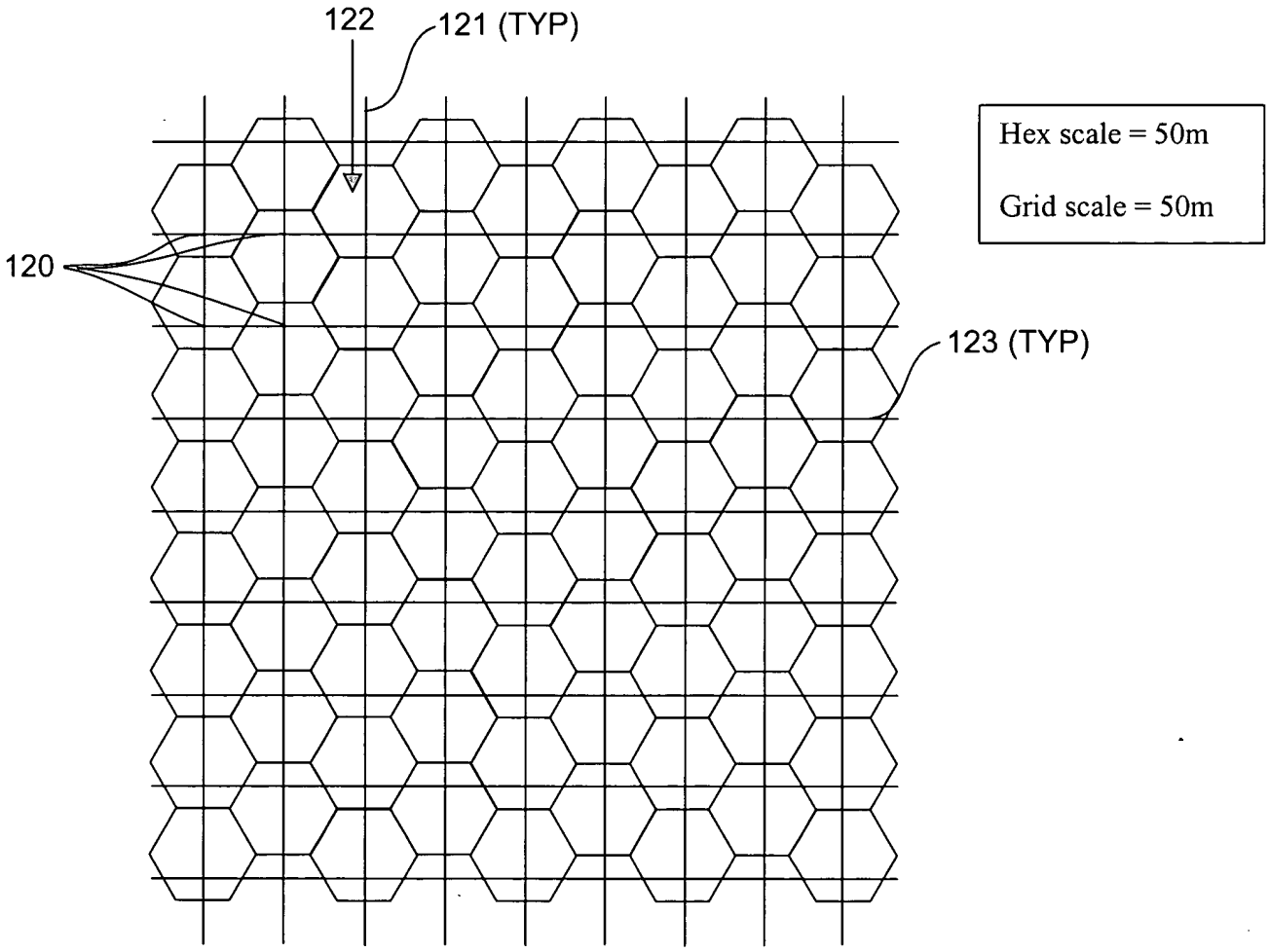


Fig. 13

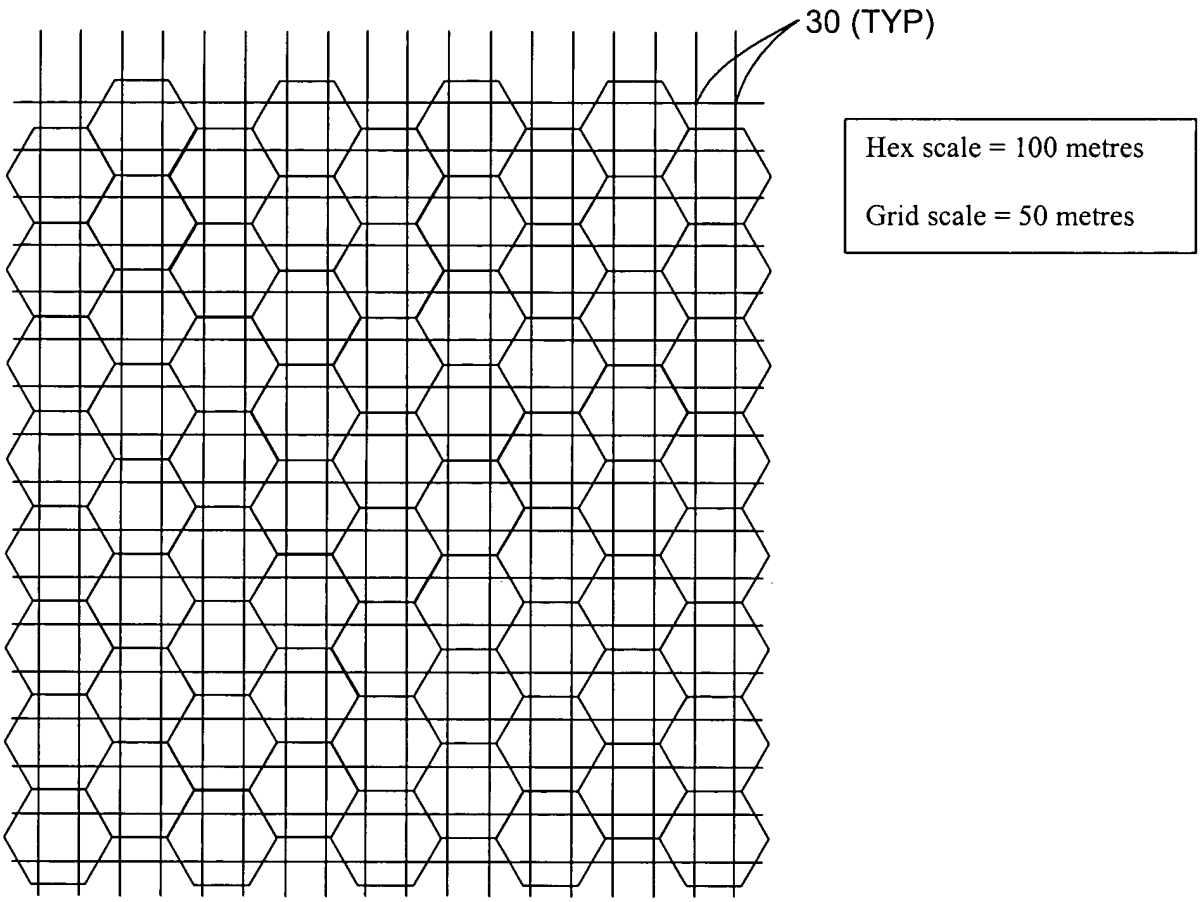
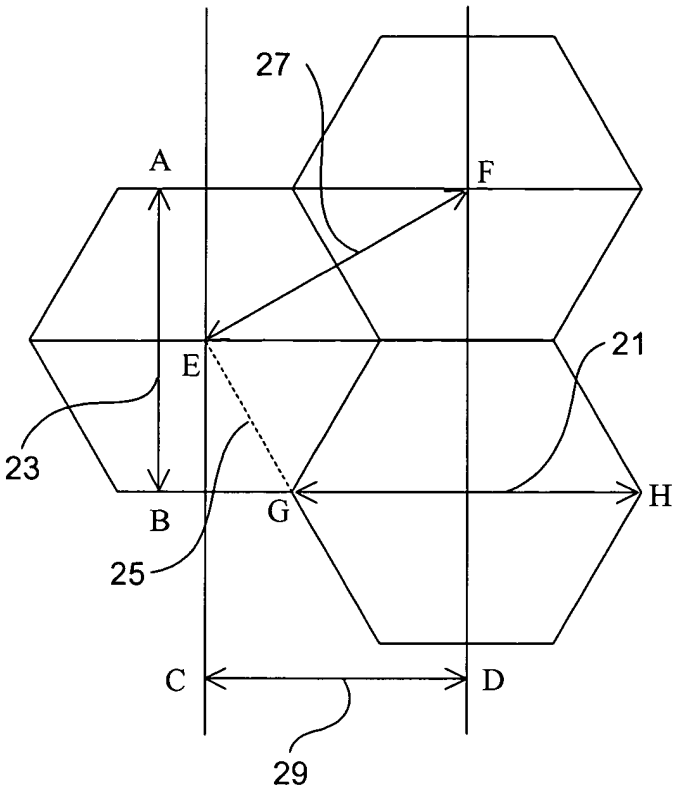


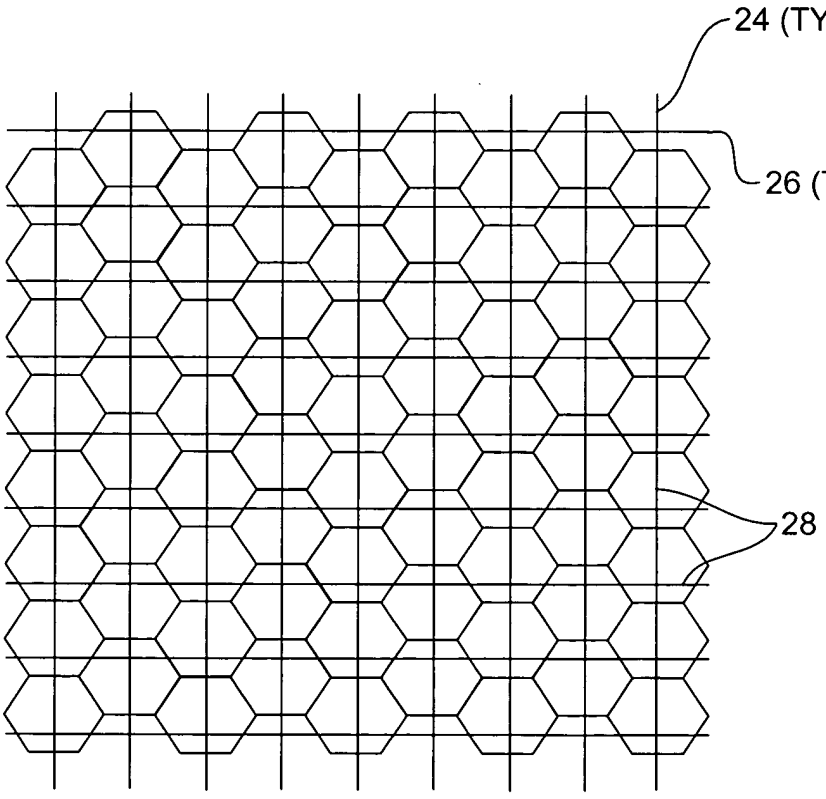
Fig. 14



All hex edges and radials are the same length.

Distance AB is greater than distance CD.

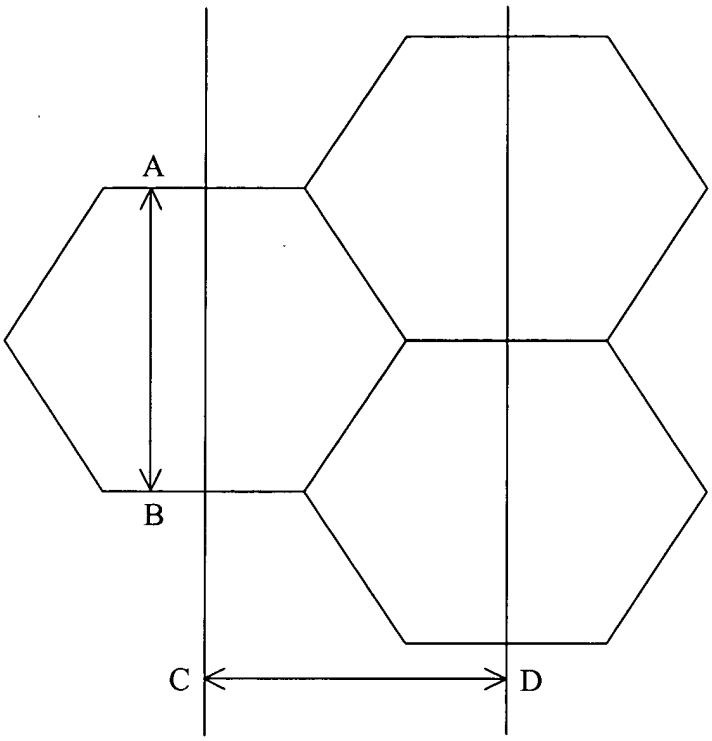
Fig. 15



Grid lines form squares

Hex distances AB and CD are equal

Fig. 16



All hex edges and radials are not the same length.

Distance AB equals distance CD.

Fig. 17

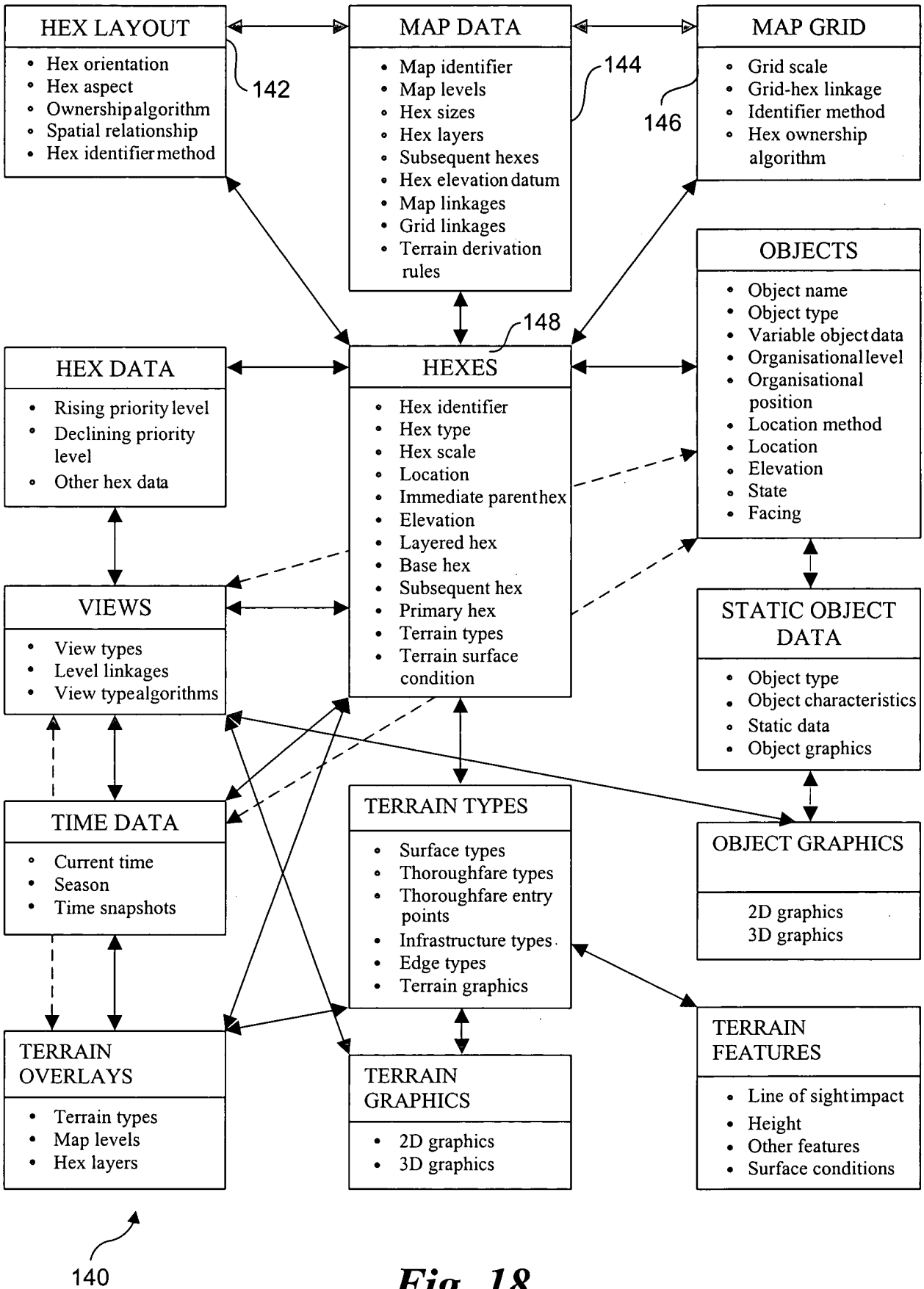

HEX LAYOUT
• Hex orientation
• Hex aspect
• Ownership algorithm
• Spatial relationship
• Hex identifier method
142
MAP DATA
• Map identifier
• Map levels
• Hex sizes
• Hex layers
• Subsequent hexes
• Hex elevation datum
• Map linkages
• Grid linkages
• Terrain derivation rules
144
MAP GRID
• Grid scale
• Grid-hex linkage
• Identifier method
• Hex ownership algorithm
146
OBJECTS
• Object name
• Object type
• Variable object data
• Organisational level
• Organisational position
• Location method
• Location
• Elevation
• State
• Facing
148
HEX DATA
• Rising priority level
• Declining priority level
• Other hex data
HEXES
• Hex identifier
• Hex type
• Hex scale
• Location
• Immediate parent hex
• Elevation
• Layered hex
• Base hex
• Subsequent hex
• Primary hex
• Terrain types
• Terrain surface condition
VIEWS
• View types
• Level linkages
• View type algorithms
STATIC OBJECT DATA
• Object type
• Object characteristics
• Static data
• Object graphics
TIME DATA
• Current time
• Season
• Time snapshots
TERRAIN TYPES
• Surface types
• Thoroughfare types
• Thoroughfare entry points
• Infrastructure types
• Edge types
• Terrain graphics
OBJECT GRAPHICS
2D graphics
3D graphics
TERRAIN OVERLAYS
• Terrain types
• Map levels
• Hex layers
TERRAIN GRAPHICS
• 2D graphics
• 3D graphics
TERRAIN FEATURES
• Line of sight impact
• Height
• Other features
• Surface conditions
140

Fig. 18

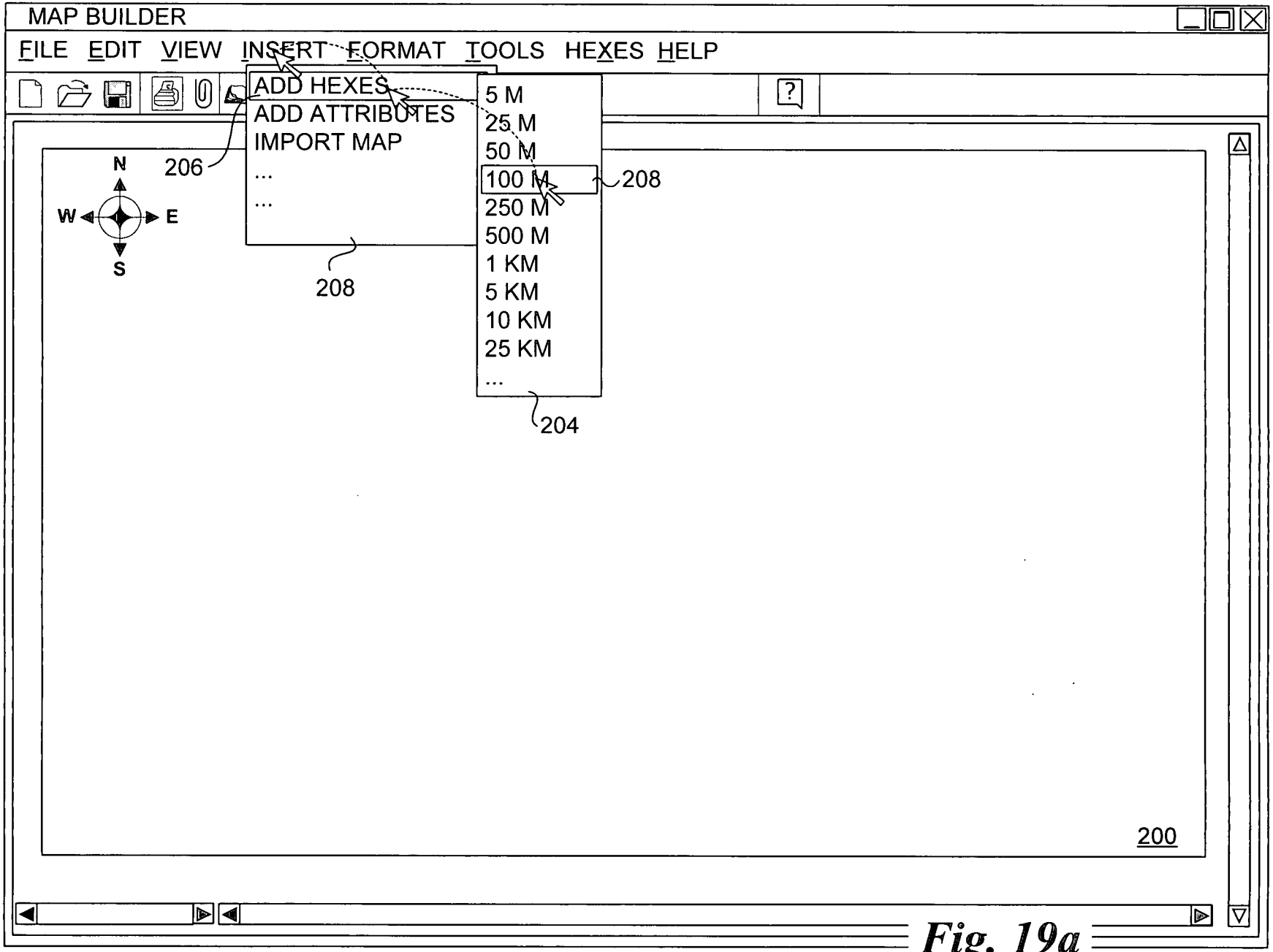

MAP BUILDER
FILE EDIT VIEW INSERT FORMAT TOOLS HEXES HELP
ADD HEXES
ADD ATTRIBUTES
IMPORT MAP
...
...
5 M
25 M
50 M
100 M
250 M
500 M
1 KM
5 KM
10 KM
25 KM
...
N
W
E
S
206
208
208
204
200

Fig. 19a

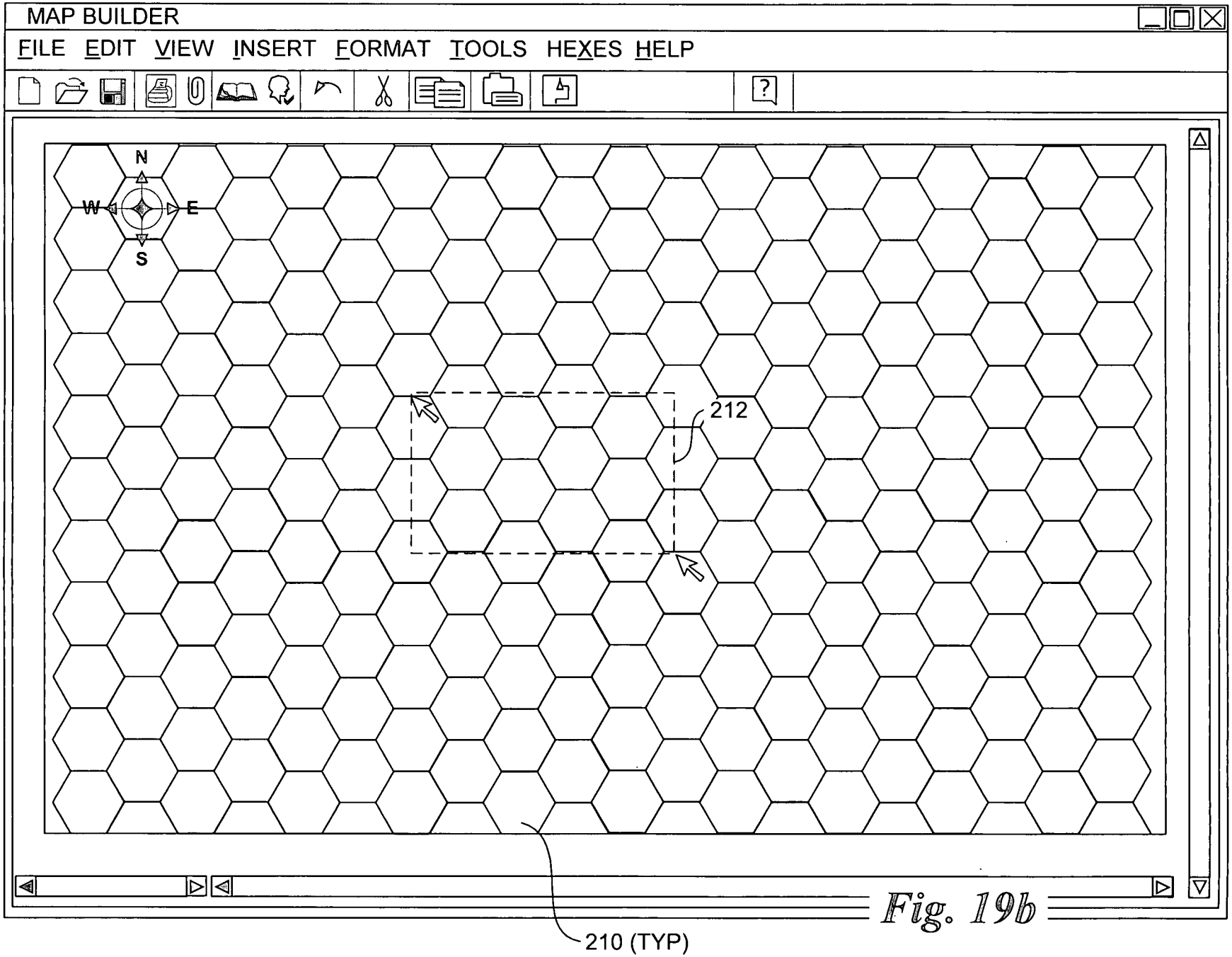

MAP BUILDER
FILE EDIT VIEW INSERT FORMAT TOOLS HEXES HELP
N
W
E
S
212
210 (TYP)

Fig. 19b

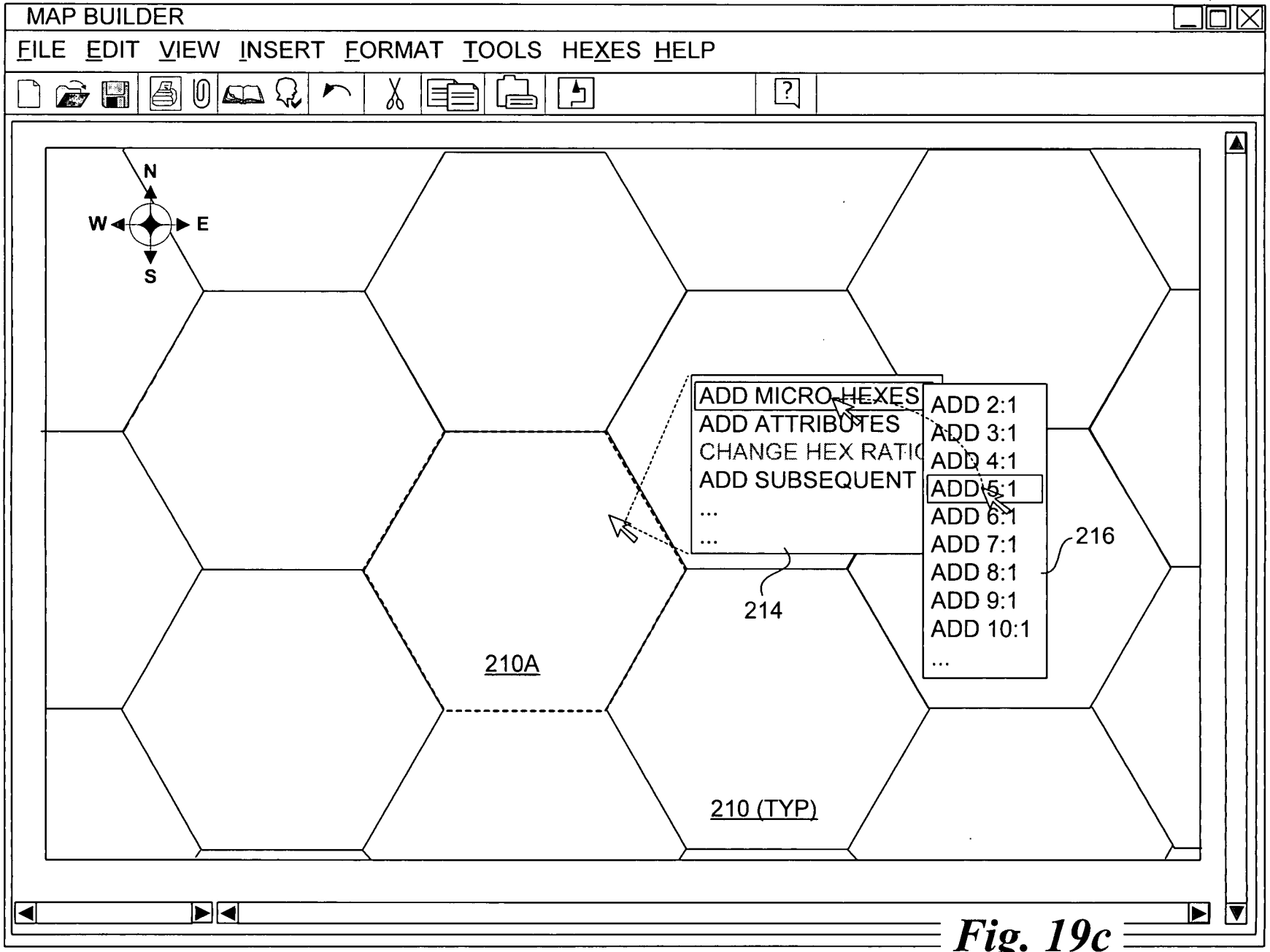

MAP BUILDER
FILE EDIT VIEW INSERT FORMAT TOOLS HEXES HELP
N
W
E
S
ADD MICRO-HEXES
ADD ATTRIBUTES
CHANGE HEX RATIO
ADD SUBSEQUENT
...
...
ADD 2:1
ADD 3:1
ADD 4:1
ADD 5:1
ADD 6:1
ADD 7:1
ADD 8:1
ADD 9:1
ADD 10:1
...
216
214
210A
210 (TYP)

Fig. 19c

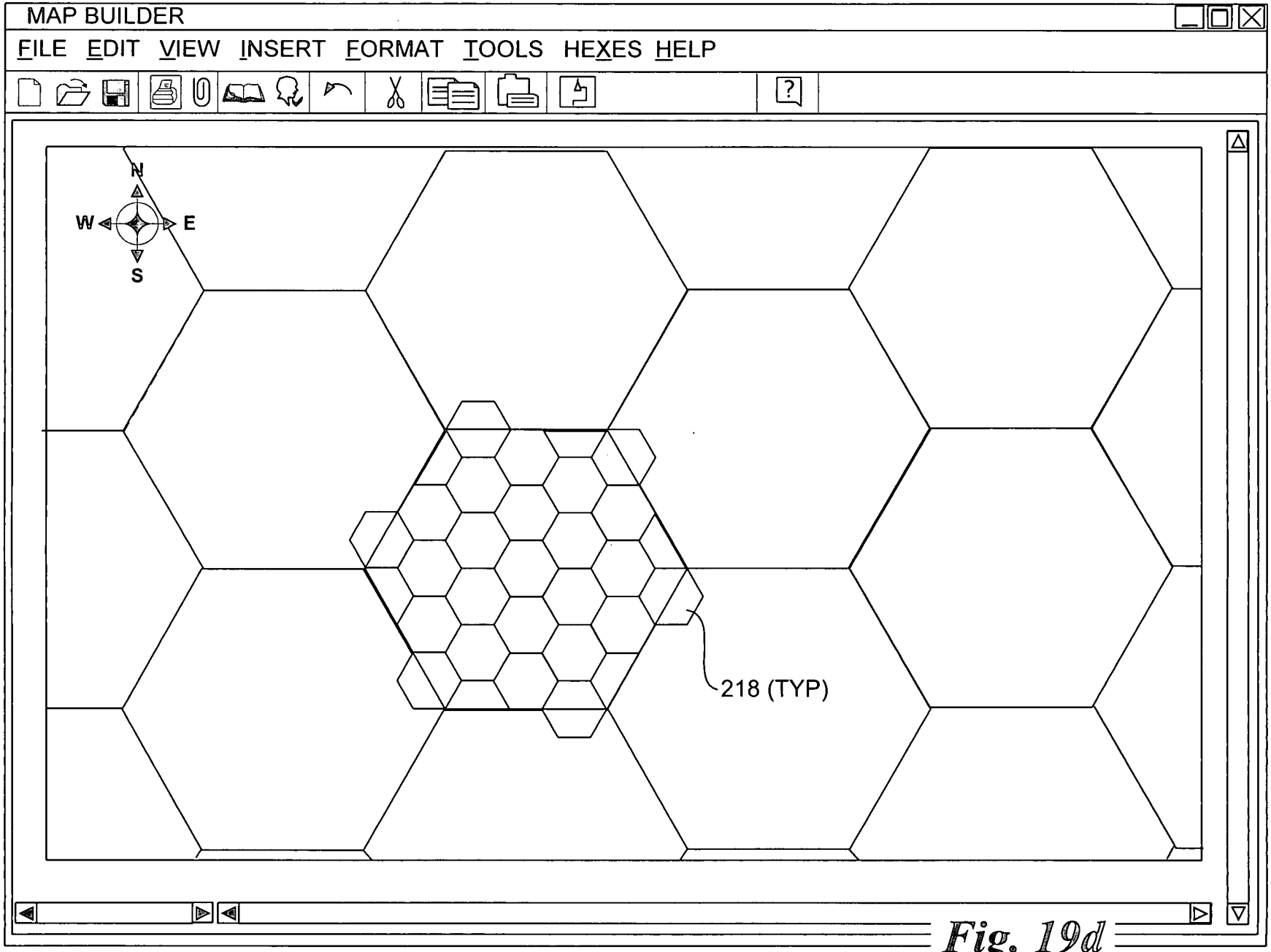

MAP BUILDER
FILE EDIT VIEW INSERT FORMAT TOOLS HEXES HELP
N
W
E
S
218 (TYP)

Fig. 19d

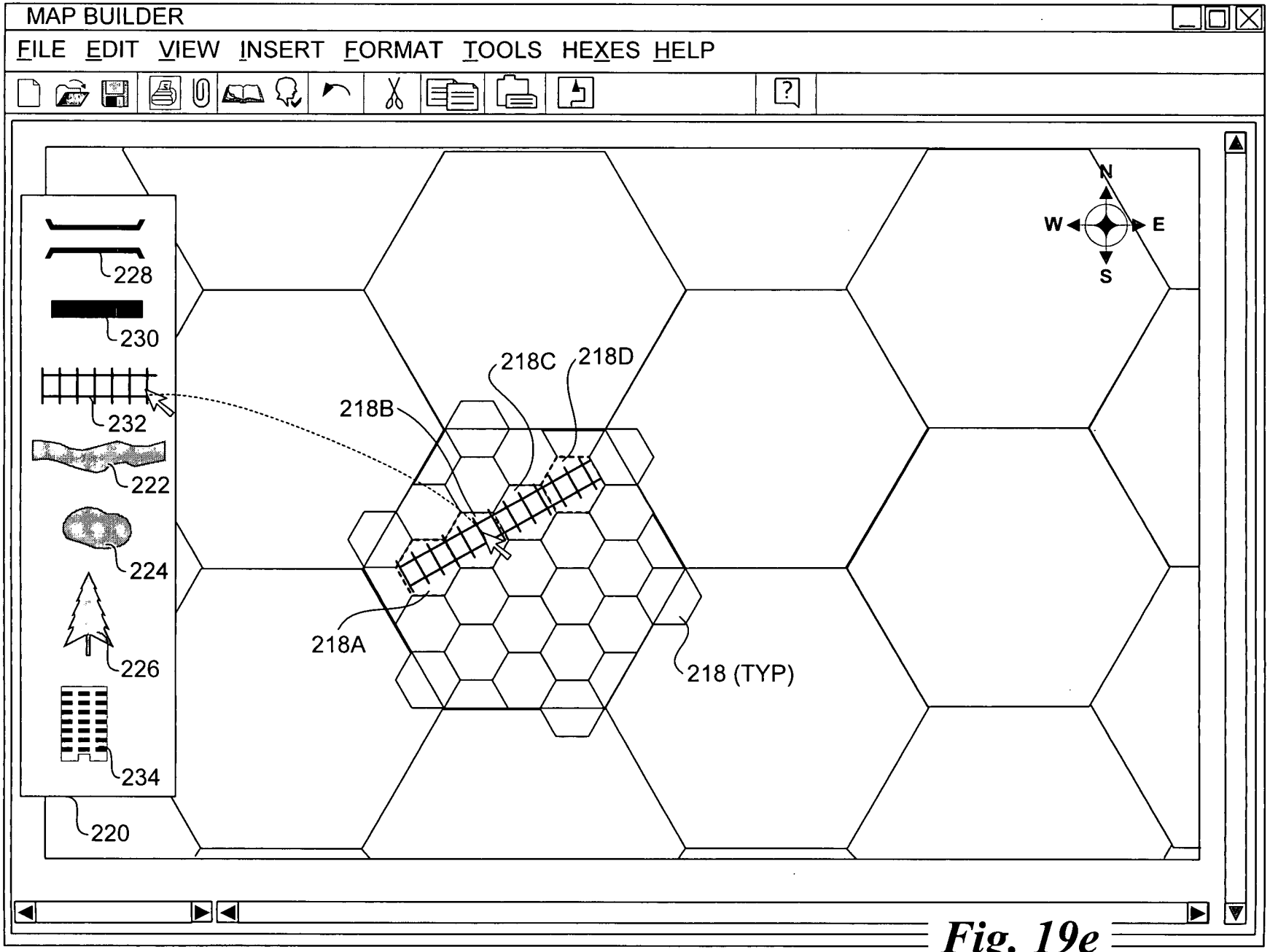

MAP BUILDER
FILE EDIT VIEW INSERT FORMAT TOOLS HEXES HELP
228
230
232
222
224
226
234
220
218A
218B
218C
218D
218 (TYP)
N
W
E
S

Fig. 19e

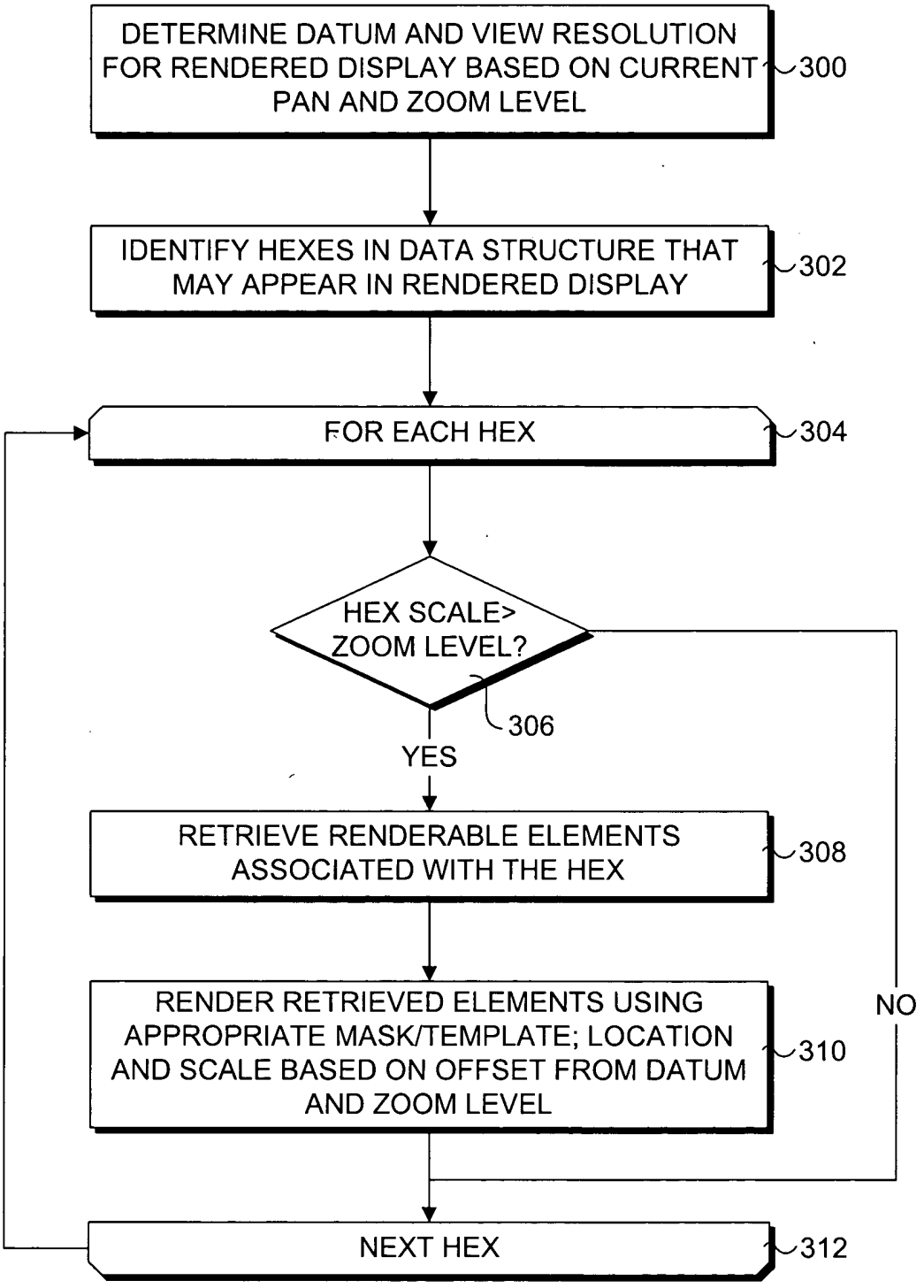

DETERMINE DATUM AND VIEW RESOLUTION FOR RENDERED DISPLAY BASED ON CURRENT PAN AND ZOOM LEVEL
300
IDENTIFY HEXES IN DATA STRUCTURE THAT MAY APPEAR IN RENDERED DISPLAY
302
FOR EACH HEX
304
HEX SCALE> ZOOM LEVEL?
306
YES
NO
RETRIEVE RENDERABLE ELEMENTS ASSOCIATED WITH THE HEX
308
RENDER RETRIEVED ELEMENTS USING APPROPRIATE MASK/TEMPLATE; LOCATION AND SCALE BASED ON OFFSET FROM DATUM AND ZOOM LEVEL
310
NEXT HEX
312

Fig. 20

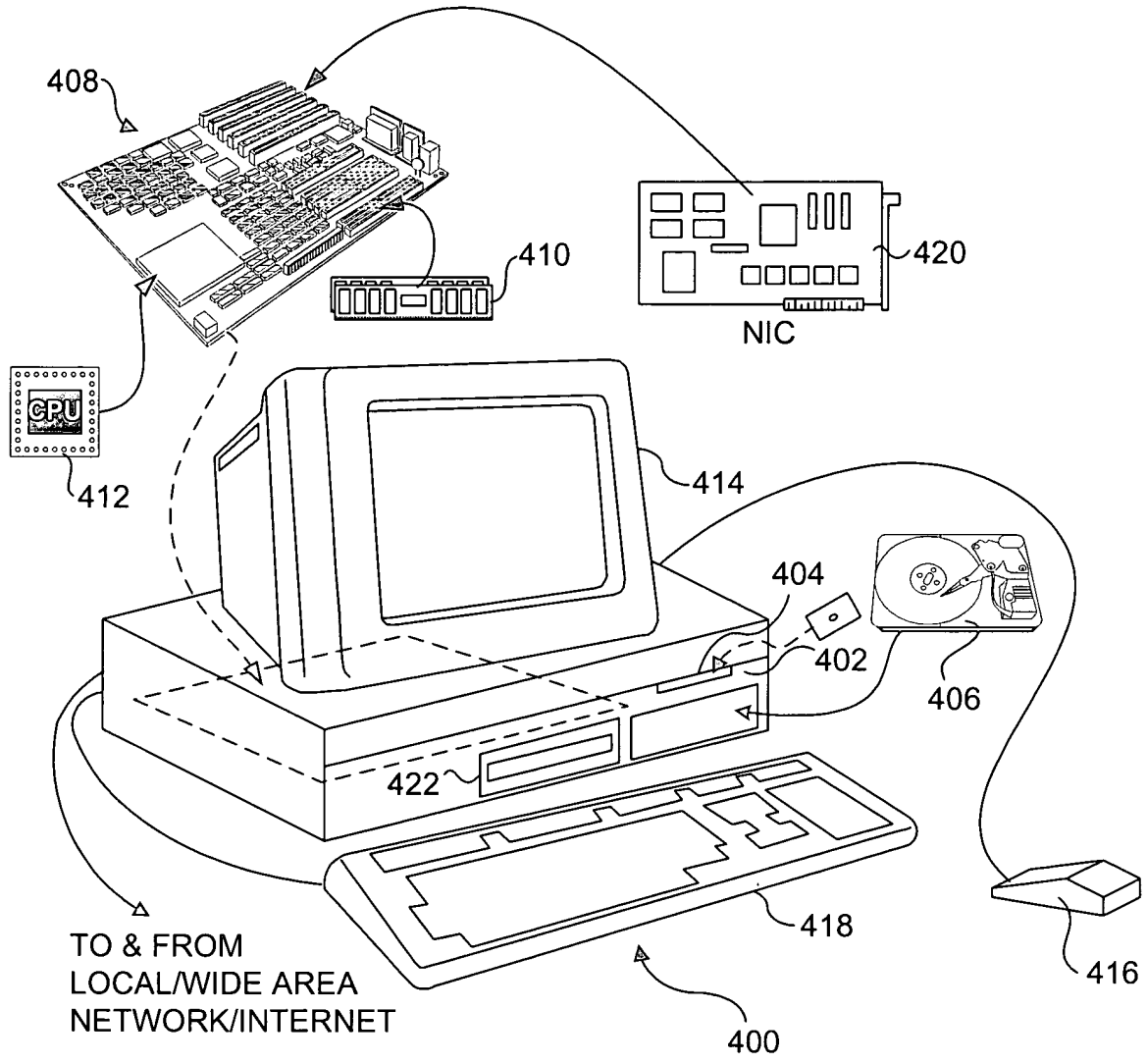

408
410
420
NIC
CPU
412
414
404
402
406
422
418
416
TO & FROM
LOCAL/WIDE AREA
NETWORK/INTERNET
400

Fig. 21